

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Original) An automatic stop/start controller for a vehicle having an engine, a motor generator to drive the engine, and an automatic transmission, said automatic stop/start controller permitting the engine to stop and start without operation of an ignition key, wherein, at start of the engine without operation of the ignition key and after said engine is started to drive by said motor generator, the controller corrects to increase the torque generated by said motor generator according to the degree of engagement of frictional engaging elements of said automatic transmission.

2. (Original) The automatic stop/start controller for the engine as defined in Claim 1, wherein said controller corrects and increases the torque generated by said motor generator according to opening degree of a throttle valve of said engine.

3. (Original) The automatic stop/start controller for the engine as defined in Claim 2, wherein said controller determines the degree of engagement of said frictional engaging elements of said automatic transmission by comparison between the engine speed of said engine and the turbine rotational speed of a torque converter of said automatic transmission.

4. (Original) The automatic stop/start controller for the engine as defined in Claim 2, wherein said controller determines whether the opening degree of said throttle valve is at idle opening degree or non-idle opening degree, and

corrects and increases the torque generated by said motor generator according to either the idle or non-idle opening degree.

5. (Original) The automatic stop/start controller for the engine as defined in Claim 2, wherein said motor generator performs functions of assisting said engine and of power generating at least during running of said vehicle.

6. (Original) The automatic stop/start controller for the engine as defined in Claim 1, wherein said controller determines the degree of engagement of said frictional engaging elements of said automatic transmission by comparison between the engine speed of said engine and the turbine rotational speed of a torque converter of said automatic transmission.

7. (Original) The automatic stop/start controller for the engine as defined in Claim 1, wherein said motor generator performs functions of assisting said engine and of power generating at least during running of said vehicle.

8. (New) A hybrid vehicle, comprising:
an internal combustion engine;
an electric motor-generator drivingly connected to the engine to assist in driving of said engine when functioning as a motor;

an automatic change-speed transmission drivingly connecting said engine and said motor to said vehicle wheels, said transmission having a rotational turbine associated therewith and also having frictional engaging drive elements; and

an automatic stop/start controller for permitting starting and stopping of the engine without operation of an ignition key;

said controller increasing the torque generated by said motor for supply to said transmission according to the degree of engagement of the frictional engaging drive elements of said automatic transmission.

9. (New) A vehicle according to Claim 8, wherein the controller determines the degree of engagement of said frictional engaging elements of said automatic transmission by comparison between the engine speed of said engine and the turbine rotational speed of a torque converter of said automatic transmission.

10. (New) A vehicle according to Claim 8, wherein the controller corrects and increases the torque generated by said motor generator according to opening degree of a throttle valve of said engine.

11. (New) A process for controlling the startup of a internal combustion engine having a motor generator coupled thereto for assisting in driving said engine, and an automatic transmission drivingly coupled to the output of said engine and said motor, the transmission having a rotatable turbine wheel and having frictional drive engaging elements, and a controller for controlling said motor to permit starting and stopping of said engine without use of an ignition key, comprising the steps of:

energizing the motor to effect starting of said engine without use of an ignition key;

determining if the engine speed exceeds the transmission turbine speed by a predetermined reference amount;

when the engine speed exceeds the turbine speed by less than said predetermined differential, preventing the supply of fuel to the engine;

then determining a motor torque value according to engine speed with reference to a motor torque table;

then increasing the motor torque value according to either the idle or non-idle opening degree of the engine throttle; and

then increasing the torque output of the motor in accordance with the increased motor torque value.